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Axinaea ninakurorum (Melastomataceae) – a new species from the northern Peruvian Merianeae hotspot.

Axinaea ninakurorum (Melastomataceae) – una nueva especie del hotspot de Merianeae norperuano

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Resumen

A new Peruvian species of *Axinaea* (Melastomataceae) is described. *Axinaea ninakurorum* is a small tree, endemic to the lower cloud forest zone in the northern Andean region of Peru. This region is well known as a highly diverse, but also highly under-collected due to difficult access. Currently the new species is only known from one tree at the type locality. However, extensive collections in the wider region have allowed to find many previously unknown populations of other Axinaea species previously deemed very rare, and it is to hope that more material of *Axinaea ninakurorum* can be found in the near future.
Key words: Peru, endemism, montane forest

Abstract

Se describe una nueva especie de *Axinaea* (Melastomataceae) del Perú. *Axinaea ninakurorum* es un pequeño árbol, endémico de la zona baja de bosques de nublina en la región norte de los Andes del Perú. Esta región es conocida como una zona de gran diversidad, pero también muy poco explorada debido a la dificultad de acceso. Actualmente, la nueva especie sólo se conoce de un árbol en la localidad tipo. Sin embargo, extensas colecciones en toda la región han permitido encontrar muchas poblaciones desconocidas de otras especies de *Axinaea* consideradas muy raras, y es de esperar que más material de *Axinaea ninakurorum* se puede encontrar en el futuro cercano.
Palabras clave: Perú, endemismo, bosques montanos.

Introduction

Axinaea (Melastomataceae, Merianeae) is a Neotropical genus including by now 42 species of small trees and shrubs, largely restricted to the Andes, growing mostly in very humid cloud-forest at altitudes between 1200 and 3800 m. *Axinaea costaricensis* Cogn. in A. DC., which grows in Costa Rica and Panama is a notable exception (Wurdack 1973, 1980). *Axinaea* belongs to the tribe Merianeae and is regarded as closely related to Meriania (Triana 1871, Cogniaux 1891, Wurdack 1973, 1980, Schulman & Hyvönen 2003). The latest published revision of the genus is still Eves (1936). A new revision by Cotton (2003) has so far not been published.

The small area of Northern Peru and southern Ecuador, with 25 species, including 3 newly described ones (Bussmann *et al.*, 2010, Sagástegui *et al.*, 2010) present, has to be regarded a hotspot for *Axinaea* and other Merianeae. .

Axinaea ninakurorum Bussmann & Paniagua sp. nov.
(Fig. 1-2)

Haec species Axinaeae floribundae (Naudin) Triana similis, sed ab ea foliis mayoribus (13x32 cm vs. 6x16cm), inflorescentiis majoribus atque floribus roseis (vs. albus) differt.

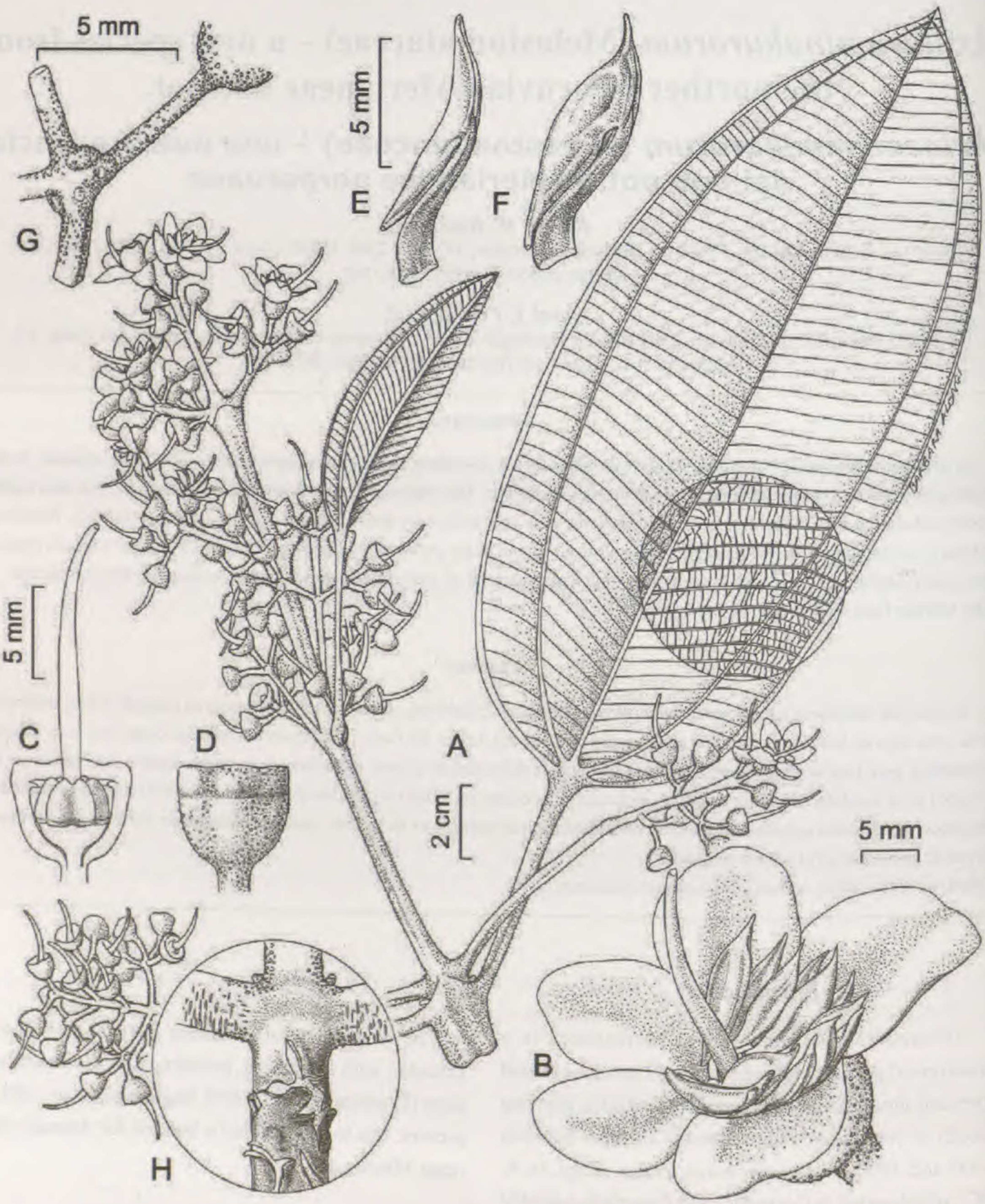

Fig. 1. ***Axinaea ninakurorum:*** A.Habit, B. Mature flower, C. Hypanthium, D. Calyx, E/F. Anthers, G. Pedicel detail, H. Detail of deeply fissured bark.

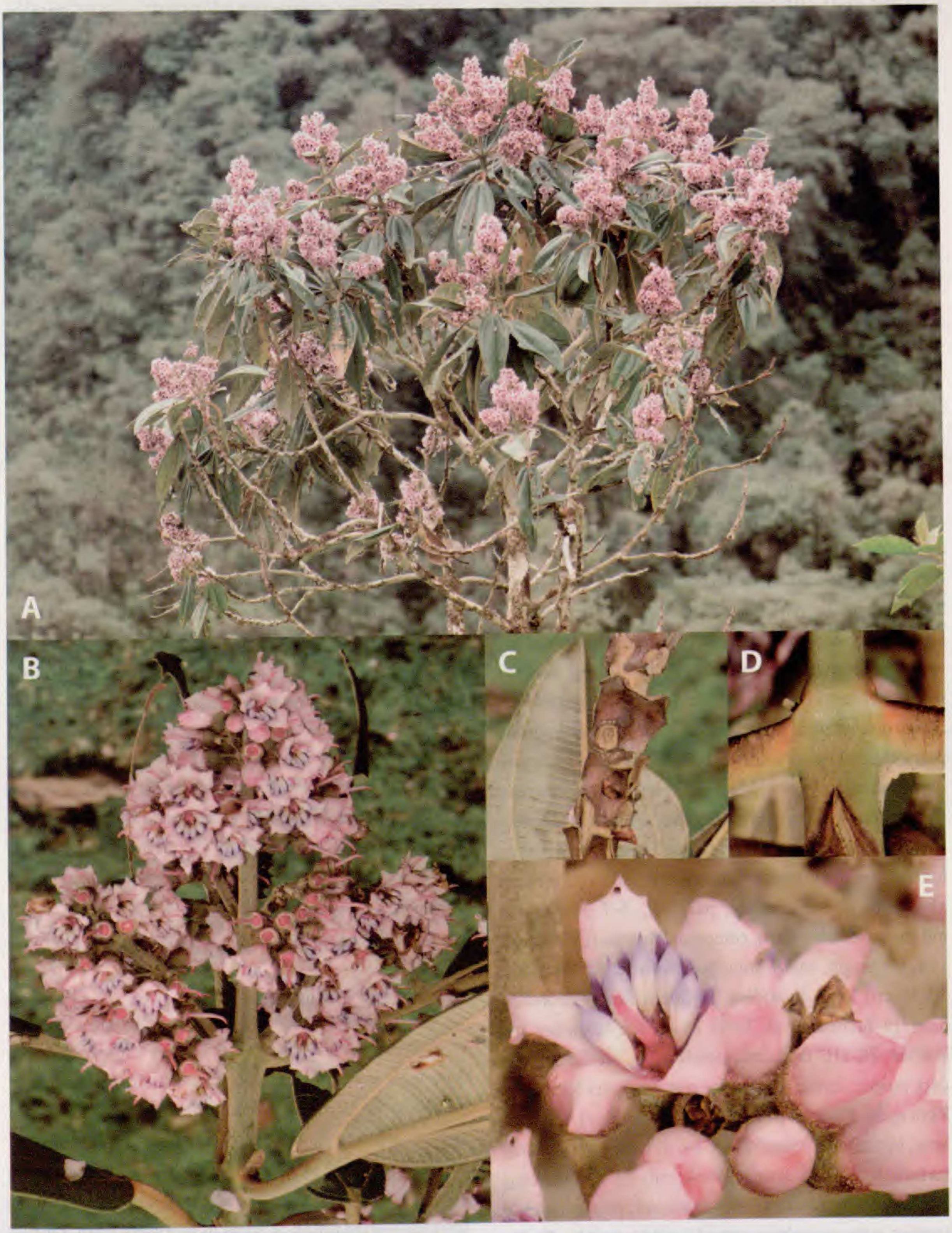

Fig. 2. ***Axinaea ninakurorum***. A. Habit. B. Inflorescence. C. Peeling bark. D. Node. E. Flower.

Type: PERU. **Region Amazonas**, Provincia Huallaga, Distrito Bolivar. Cloud forest surrounding "Pampa Hermosa" around old Chacha and Inca settlement, with high amount of old *Cedrela*. 06°5931.9"S, 077°39'16.3"W, 2400 m. 24 -V- 2011. *R.W. Bussmann, N.Y. Paniagua Z., C. Vega & L. Cotrina 17067* (holotype HAO!, isotypes MO!, NY!).

Singular **treelet**, 4-5 m tall. **Branches** quadrangular or terete, densely furfuraceous throughout; hairs on branches short, thick, dendritic with well developed axis and moderate number of terete, short to moderately long arms, 0.5-1.5mm long (Wurdack 1986: indumentum type 26), nodes slightly thickened, without stipuliform flaps. **Leaves** coriaceous, rigid, erect; petiole 40-60 mm long, indumentum cream-colored, densely arachnoid-furfuraceous; lamina lanceolate, (4)9-15 x (10) 23-32 cm, petiole length to lamina length 1:(2.25)6(8); lamina length to width (1.2)2.5(3.5):1; the indumentum adaxially sparsely arachnoid-furfuraceous, abaxially densely arachnoid-furfuraceous; apex broadly acute; base attenuate without scutum, strongly revolute abaxially; margins, shallowly denticulate, weakly revolute; venation 5-plinerved, including smaller marginal nerves, immature leaves 3-plinerved, acrodromous with one basal pair and one suprabasal pair of distal main veins and an additional, weak pair of inframarginal veins, adaxially sparsely to moderately furfuraceous along primary veins, abaxially densely furfuraceous along primary and secondary veins, hairs as on the branches; secondary nerves prominent abaxially and adaxially, parallel, 5-7 mm apart. inflorescence a terminal, compound thyrsoid (Weberling 1981), upright, multi-branched, with 12-20 branches, 30-50 cm long, including 10-20cm long peduncles, densely furfuraceous, hairs as on the branches but shorter. 80-110 flowered, petals pink, sterile anthers dark purple, fertile anthers magenta, flowers 5-merous, 3 cm wide. **Flowers** 5-merous, 2-3 cm wide; 1.5-2.5 cm long; hypanthium cupuliform, 5-6 mm long, moderately furfuraceous, hairs as on pedicels; calyx 1-1.5 mm long, 5-lobed, teeth inconspicuous or absent; petals magenta turning pale neon-blue outside, white inside, fleshy, obovate, concave, 9-12 x 7-10 mm, apex asymmetrically bilobed; stamens 10, isomorphic; filaments complanate 4-6 mm long; connective ellipsoidal, acute basally, yellow turning red-orange; anthers 5-7 mm long, with one small slightly dorsal pore, deep reddish-purple; ovary oblong, 8-costulate, apex 4-lobed, 4-celled; style 14-19 mm long, pale blue. Not fruiting when collected. Bark peeling in large flakes.

The species is most similar to *Axinaeae floribundae* (Naudin) Triana but inflorescence much larger and flowers bright pink with violet anthers (instead white), much larger leaves and deeply peeling bark.

Distribution and conservation status

Axinaea ninakurorum is known only from the type locality in the Peruvian region San Martin, province Huallaga, District Bolivar on the eastern slopes of the Northern Peruvian Andes. One single specimen of the species was found growing between the Chacha and Inka ruins of "Pampa Hermosa", in the Rio Huayabamba valley, at altitudes from around 2400 m. No further specimens were found in the area so far. The species must be regarded as critically endangered (CR A3B2ab(i,iii,iv)) according to IUCN (2001) because it is known only from a restricted area of less than 10km2 and the whole population is outside protected areas.

Etymology

Axinaea ninakurorum grows on a hillside where thousands of fireflies can be seen each night. Thus the local language term for firefly "ninakuro" was used to name the species, to honor the original inhabitants of the area.

Conservation status of other species of *Axinaea* in Northern Peru

The mountain ranges of Northern Peru are difficult to access, and the collection history clearly reflects this, with many species only known from their type localities or close-by collections. In addition, many species seem to have very distinct flowering periods. Melastomataceae in general, and *Axinaea* in particular are no exception. Our expeditions since 2008 have covered a wide range of areas in Northern Peru, during different seasons. Species deemed rare in Cotton (2003), like *Axinaea crassinoda* Triana, could be found in

essentially every valley of the region, and are in fact quite common, but are rarely found flowering. *Axinaea mertensioides* Wurdack, previously only known from the type collection, could now also be confirmed about 50km South of the original area, and was quite common along small streams, and *Axinaea fernando-cabiesii* Bussmann, Gruhn & Glenn could also be confirmed from various new locations. This indicates that much more fieldwork is needed to get a real indication for the conservation status of species deemed critically endangered.

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Literature Cited

Bussmann, R.W., Gruhn, J. & Glenn, A. 2010. *Axinaea fernando-cabiesii* and *A. reginae* spp. nov. (Melastomataceae) from upper Amazonia of Peru, with notes on the conservation status of *A. flava*. Nordic Journal of Botany 28: 518-522.

Cogniaux, A. 1891. Melastomataceae. *In*: Candolle, A.C. de (Ed.), Monographie Phanerogamarum 7: 1-1256.

Cotton, E. 2003. A taxonomic revision of the genus *Axinaea* Ruiz & Pav. (Melastomataceae). M.Sc. thesis, Department of Systematic Botany, University of Aarhus, Denmark, pp. 1-160 (unpublished).

Eves, D.S. 1936. A revision of the genus *Axinaea* (Melastomataceae). Bulletin of the Torrey Botanical Club 63: 211-226.

Sagástegui , A.; C. Arroyo & E. Rodríguez. 2010. Una nueva especie de *Axinaea* (Melastomataceae: Merianieae) del Norte de Perú. Revista Peruana de Biología 17(2): 145-149.

Schulman, L. & J.Hyvönen, 2003. A cladistic analysis of *Adelobotrys* (Melastomataceae) based on morphology, with notes on generic limits within the tribe Merianieae. Systematic Botany 28: 738–756.

Triana, J. 1871. Les Melatomataces. Transactions of the Linnean Society London 28: 1-188.

Weberling, F. 1981. Morphologie der Blüten und der Blütenstände. Euggen Ulmer, Stuttgart

Wurdack, J.J. 1973: Melastomataceae. - *In*: Lasser, T. (ed.), Flora de Venezuela 8: 1-819.

Wurdack, J.J. 1980. Melastomataceae. - *In*: Harling, G. & Sparre, B. (eds), Flora of Ecuador 13:1-403.

Wurdack, J.J. 1986. Atlas of hairs for Neotropical Melastomataceae. Smithsonian Contributions to Botany 63: 1–80.